IN THE CLAIMS

Claim 1-15 (canceled)

16. (currently amended) A process for reducing the surface reflectance of a polymer substrate to less than 2% in the wavelength range from 400 nm to 1100 nm by formation of a refractive index gradient layer in the polymer substrate, the refractive index gradient layer being formed by ~~means of~~ ion bombardment using high-energy ions, ~~comprising~~ ~~generating~~ wherein:

a polymer substrate is provided, the polymer substrate has a surface to be bombarded,

~~the~~ high energy ions to be used in an ion bombardment are generated by means of an argon and oxygen plasma as plasma ion source, and

impacting the surface of ~~impacting~~ the polymer substrate ~~surface during the ion bombardment~~ by the generated high energy ions in an ion bombardment, wherein

the high energy ions have an energy of from 100 eV to 160 eV, ~~and~~

the duration of the ion bombardment is from 200 to 600 s, and

the ion bombardment is carried out until the desired refractive index gradient layer with a thickness of at least 230 nm has been formed.

17. (previously presented) The process as claimed in claim 16, wherein the process reduces the surface reflectance to less than 1.5% in the wavelength range from 420 nm to 860 nm.

18. (previously presented) The process as claimed in claim 16, wherein the ions impacting the polymer substrate during the ion bombardment have an energy of from 120 to 140 eV.

19. (previously presented) The process as claimed in claim 16, wherein the duration of the ion bombardment is from 250 to 350 s.

20. (previously presented) The process as claimed in claim 16, wherein the plasma ion source is operated with at least 30 sccm of oxygen.

21. (previously presented) The process as claimed in claim 16, wherein the ion bombardment is carried out at a pressure of about $3*10^{-4}$ mbar.

22. (previously presented) The process as claimed in claim 16, wherein the polymer substrate is selected from the group consisting of: polymethyl methacrylates (PMMA), methyl-methacrylate-containing polymers, and diethylene glycol bisallyl carbonate (CR39).

23. (currently amended) The process as claimed in claim 22, wherein the selected polymer substrate is ~~comprises~~ polymethyl methacrylate (PMMA), the ions impacting the substrate during the ion bombardment have an energy of from 100 eV to 160 eV, and the duration of the ion bombardment is from 200 to 400 s.

24. (previously presented) The process as claimed in claim 23, wherein the ions impacting the polymer substrate during the ion bombardment have an energy from 120 to 140 eV, and the duration of the ion bombardment is for 250 to 350 s.

25. (currently amended) The process as claimed in claim 22, wherein the selected polymer substrate is ~~comprises~~ diethylene glycol bisallyl carbonate, the ions impacting

the substrate during the ion bombardment have an energy of between 120 eV and 160eV, and the duration of the ion bombardment is from 500 to 600 s.

26. (previously presented) The process as claimed in claim 25, wherein the ions impacting the polymer substrate during the ion bombardment have an energy of between 150 eV and 160eV.

27. (currently amended) A surface-modified substrate ~~comprising~~ produced from ~~a polymer substrate treated by~~ the process as claimed in claim 16.

28. (previously presented) The surface-modified substrate according to claim 27, wherein the polymer substrate is selected from the group consisting of polymethyl methacrylate (PMMA), methyl-methacrylate-containing polymers, or diethylene glycol bisallyl carbonate (CR39).

29. (canceled)

30. (canceled)

31. (currently amended) The surface-modified substrate as claimed in claim 28, ~~comprising a~~ wherein the selected substrate is polymethyl methacrylate substrate which is modified on one side and has a transmittance of at least 95%.

32. (currently amended) The surface-modified substrate as claimed in claim 28, ~~comprising a~~ wherein the selected substrate is polymethyl methacrylate substrate which is modified on both sides and has a transmittance of at least 97% in the wavelength range from 400 nm to 1100 nm.

33. (previously presented) Utilizing the method of claim 16 for reducing the reflection of optical elements.

34. (canceled)